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Infection Control Experts

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Special points of interest:

- * Understanding concepts such as resistance
- * Some insight into what MPI approvals actually mean.
- * New product launch, Heme, for horses
- * A look at a novel approach to reduce nitrogen leaching

It is no accident that antimicrobials and antimicrobial resistance have featured strongly in recent newsletters.

While not the most interesting grabbing subject around Ethical Agents, by virtue of its many strong alliances, has developed over recent years into a source for many infection control prod-



Other Issues

While not replacing SteriGENE (perish the thought!) Megablud, an equine haematinic, is being replaced. We outline why and also outline the features of this important upgrade for equine clients.

ucts, in, on and off animal.

The company now has a wealth of data on file and markets antibiotics from all spectra of the “traffic light” system as well as front line antiseptics and surface disinfectants.

The staff training resulting from this means that our area managers can all be considered infection control experts.

Not only is the team well trained in product knowledge, but overall the company can give best practice advice on antimicrobial usage and can make available educational tools on the subject.

When EA has the market leading product in veterinary disinfection, SteriGENE, then there has to be solid reasons for launching complementary products.

The team are skilled in explaining why this should be and how to get the best types of infection control in clinics.



We also have an article on a subject of high relevance to both the urban and rural communities.

That is water quality and, more particularly, a means to control nitrogen leaching from cattle.



MPI Approvals - What Do They Actually Mean?

Much is made of disinfection approvals but what do they really mean? For a start New Zealand, unlike Australia, does not register disinfectants in the manner that veterinary medicines are registered as fit for purpose. This can lead to many wild claims as to efficacy in a totally unregulated market.

In the human medical field, TGA (Therapeutics Goods of Australia) approval is seen as the bottom line. TGA is the controlling medical governance agency similar to our own Medsafe.

Despite the fact that NZ does not register disinfectants most hospitals will not approve their use unless they have TGA approval, something that has become very expensive and very time consuming. (SteriGENE, under the name of TriGene Advance has TGA approval as a hospital grade disinfectant.)

Going down from there we haveASUREQuality approval.

ASUREQuality Limited is a state-owned Enterprise fully owned by



the Government of New Zealand. The organization's expertise lies in the areas of Food safety and Biosecurity and they certify products, such as disinfectants, as fit for use. They do not so much do an in depth analysis of efficacy but list the claims made by the company.

The different types of MPI approval can be quite confusing, there is dairy and non-dairy, food contact and non-food contact (where virtually all disinfectants sit) and so on.

Basically some confusion arises as a different approval is needed for walls and floors as opposed to food contact areas, i.e. if one wants approval for both situation there is a need for two separate approvals, there does not seem to be one approval to cover both situations.

SteriGENE has the following MPI Approvals:

C31 This may be used in all areas. Before use all edible product and packaging material must be re-

moved from the room, C32 This may not be used in edible areas, C33 This is a laundry compound, C37 General purpose detergent which is not for use on food surfaces, but may be used on floors and walls, C38 This may be used for cleaning large processing rooms, C41 This may be used in all areas. Before use, all edible product and packaging material must be removed from the room or carefully protected.

In addition SteriGENE has MPI Dairy Approval, ASUREQuality approval and, the most stringent of all, TGA approval under the name TriGene Advance. This is the only one that also evaluates efficacy.

There seems to be no other product on the New Zealand market with all 9 such approvals.

It is no wonder then that SteriGENE is used and recommended by MPI and DOC for environmental issues such as Kauri dieback, Psa in Kiwifruit, Myrtle Rust disease and now also recommended by MPI for M bovis disinfection.



Guilt

While golfing, I accidentally overturned my golf cart. A very attractive lady golfer, who lived in a villa on the golf course, heard the noise and called out from her porch: "Are you okay?"

"I'm okay, thanks," I replied as I pulled myself out of the twisted cart.

She said: "Come up to my villa, rest a while, and I'll help you get

the cart up later."

I noticed she had nice svelte figure.

"That's mighty nice of you," I answered. "But I don't think my wife would like it."

"Oh, come on now," she insisted.

She was so pretty, and very, very persuasive. And I was weak.

"Well okay," I finally agreed. "But I'm sure my wife won't like it."

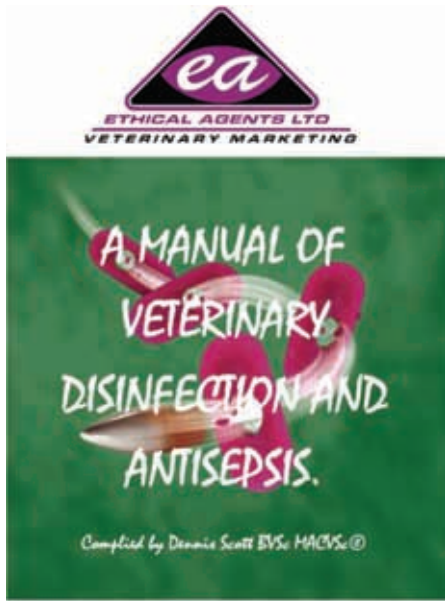
After a couple of scotches, I thanked her and said: "I feel a lot better now. But I know my wife is going to be really upset. So I'd better go now."

"Don't be silly!" she said with a smile. "Stay for a while. She won't know anything ... By the way, where is she?"

"Still under the cart!" I replied ...

Supplying Knowledge

With our mantra of EA bringing knowledge and R&D to the veterinary industry the company has produced two manuals on infection control and now has a third document available to interested clients.



The first document available was a manual on disinfection and antiseptics.

This has proved extremely popular, especially with nurses. The manual goes over definitions and classifications and is very informative.

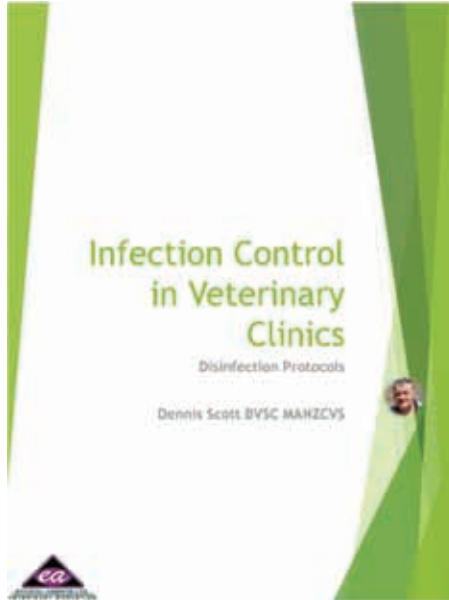
Flavours

Our Robbie was an air hostess in an earlier life. Once, during her days as a trolley dolly she was tasked with supplying the ice cream desert for the in flight meal.

Unfortunately for Robbie she was recovering from a cold at the time and had lost her voice.

“What flavours do you have?”, asked one of the passengers.

There is an open book multi-choice questionnaire at the end and, upon completion, a certificate is issued.



There have been many such certificates proudly earned by, mostly, nurses over the years.

A couple of years ago a second document was put out and it is infection control protocols, i.e. the processes for infection control in clinics, kennels and surgeries.

This also covers hand washing and hand washing techniques along with surface disinfection, clothing etc. It is quite embracing of all situations

and also has proved both popular and very useful.

Now, hot of the press, we have a document detailing antimicrobial resistance and how it occurs, including transfer and cross resistance. Although more aimed at the veterinarian it is an attempt to simplify the issue and uses graphic extensively so of value to nurses as well.

“It is totally non commercial, is referenced and peer reviewed.”

It is totally non commercial, is referenced and peer reviewed. Already some larger practices have taken it on board and are disseminating the information among themselves.

All three documents are readily available and free of charge. It certainly is one way to get one’s mind around some tedious but vitally important concepts.

It is also an easy and cheap way to earn CPD points.

The Mechanics of Antimicrobial Resistance

“Vanilla, strawberry and chocolate,” answered our Robbie in a hoarse whisper.

“Do you have laryngitis?” the sympathetic passenger asked.

“No,” replied Robbie with some effort, “just vanilla, strawberry and chocolate.”



Prudent Use In The Disinfection World

Do antiseptic and disinfectant chemicals cause antimicrobial resistance? Absolutely! Microbes react to any noxious chemical by genetic alteration. Resistance to chlorhexidine is already well documented, as is that to triclosan. More recently even the claims of Manuka honey have been stunted a little as resistance strains to the bacteriocins in the honey have been found.

There is a strong school of thought that resistance is not an issue with highly reactive molecules such as hypochlorous acid and chlorine dioxide, because their electrostatic action is a physical, not a chemical one, so there is no resistance development. Since it is almost impossible to prove a negative this has to remain a theory, albeit a very strong one. Suffice to say that risk of resistance to these two molecules is minimal.

So is it logical to apply best practice guidelines to disinfectant use in the same way as we do to antibiotic use? Should we start now rather than waiting until more resistance shows its head? Both are rhetorical questions as the answer to both is a clear yes.

We talk a lot of the 5 Rs in antimicrobial resistance (responsibility, refinement, reduction, replacement and review.) The first, responsibility, is recognizing the issue and the last, review, is keeping tabs on the process and how it is working.

That leaves refinement, reduction and replacement the major considerations. Mere reduction is a massive problem because the advent of antimicrobial use on humans and animals necessitates a greater degree of environmental hygiene which, in itself, demands heavier disinfectant use.

Since antibiotics may be very selec-

tive in targets refinement is much easier with them. Disinfectants are, by nature, broad spectrum antimicrobials so refinement is not so clear cut. Nevertheless it is one avenue to explore when considering responsible use. The other is replacement and the two can go hand in hand.

It is no surprise, considering its prodigal use, that resistance has developed to chlorhexidine. It is used in everything from mouthwashes to surgical scrubs. Triclosan also has been used in tooth pastes, odour eaters in shoes and a myriad of other ways so it has been indicted not only as a carcinogen but also as a chemical conferring resistance. Replacing these two antiseptics would seem to be a priority. Whilst replacing triclosan would not seem to be a major issue, replacing chlorhexidine would be because of its widespread acceptance and use. Paradoxically this is the very reason that its replacement has become critical. Hypochlorous acid has a

much greater efficacy and no resistance issues. Nor is it likely to have issues thanks to its physical, rather than chemical, mode of action.

Thus the biggest issue is in the surface disinfectant field and this assumes massive importance since these chemicals are designed to be used extremely widely in the environment. How can we minimize resistance development when we slosh these chemicals around with gay abandon?

SteriGENE has one solution, abandoning single molecule technology and using several different chemicals together that work in synergy with their different modes of action. The major actives (PHMB,

"It is no surprise, considering its prodigal use, that resistance has developed to chlorhexidine."

DDAC and BAC, a combination known as a halogenated tertiary amine) work in conjunction with each other on the microorganisms and the detergents and nanotechnology in the solution aid penetration, not only to the microorganisms but also through the cells walls. The odds of resistance development with SteriGENE are incredibly small, nevertheless they can be virtually eliminated totally by a simple procedure.



Due to its very high, well documented efficacy, coupled with its low cost SteriGENE has proven to be the disinfectant of choice from outside in the environment to inside hospital situations. High efficacy, great economy and material tolerance are game changers.

Hot on the heels of this well ac-

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Prudent Use In The Disinfection World

(Continued from page 4)
cepted market leader Tristel, the manufacturers of SteriGENE have produced another top class chemi-



cal product in Swift, which is based on chlorine dioxide technology, that is true chlorine dioxide not the spuriously claimed 'stabilised chlorine dioxide'.

The very nature of chlorine dioxide, i.e. that its reactivity is entirely due to its instability makes the concept of a stabilised chemical oxymoronic.

Also extremely efficacious with well documented high rapid kill rates, chlorine dioxide in Swift is simple and accurate to mix far more economical than the so called 'stabilised chlorine dioxide' (approximately one tenth of the cost per litre mixed) and is the perfect alternate to SteriGENE.

Why alternate with SteriGENE?

Having TGA approval makes SteriGENE built for purpose as far as veterinary disinfection goes and, by virtue of its combination of chemicals resistance development is minimal, almost zero.

However prudent use guidelines, using the 5rs, in particular refinement and replacement means that best practice process of alternating

disinfectants brings that risk virtually to zero.

In addition, whilst Swift is nearly a tenth of the cost of the ready to use 'stabilised chlorine dioxide', it is still 4-5 times more expensive than SteriGENE per litre mixed.

"makes the concept of a stabilised chemical oxymoronic."

Using SteriGENE as the base everyday disinfectant for all purposes and a once per week in a large clinic, or once per month for a small clinic, 'deep clean' with Swift eliminates even the most difficult organisms in a prudent, efficient cost effective manner.

Thanks to the boffins at Tristel best practice disinfection does not have to be a complicated process.

A Good Buy

A man was reading the paper when an ad caught his eye. It loudly announced, "Porsche! New, \$500!"

The man thought it was very unusual to sell a Porsche for \$500 and he thought it might be a joke, but he said to himself, "it's worth a shot."

So he went to the lady's house who

was selling the Porsche and she led him into the garage. Sure enough there was an almost brand new Porsche.

"Wow," the man exclaimed, "Can I take her for a test drive?"

"Sure," answered the lady. Unlike what he expected the man found that the car performed perfectly.

When he got back to the lady's

house and handed over the \$500 he asked her, "Why are you selling me this great Porsche for only \$500?"

Then the lady said with a laugh, "My mongrel of a husband just ran off with his big busted blonde secretary and he told me, "You can keep the house and the furniture, just sell my Porsche and send me the money"

The Robbery

McTavish and McNab were out walking on a lonely road when they were attacked by an armed mugger.

"Hand over all your money at once," he ordered.

"Here's that 50 pounds that I owe you" said McTavish to McNab."

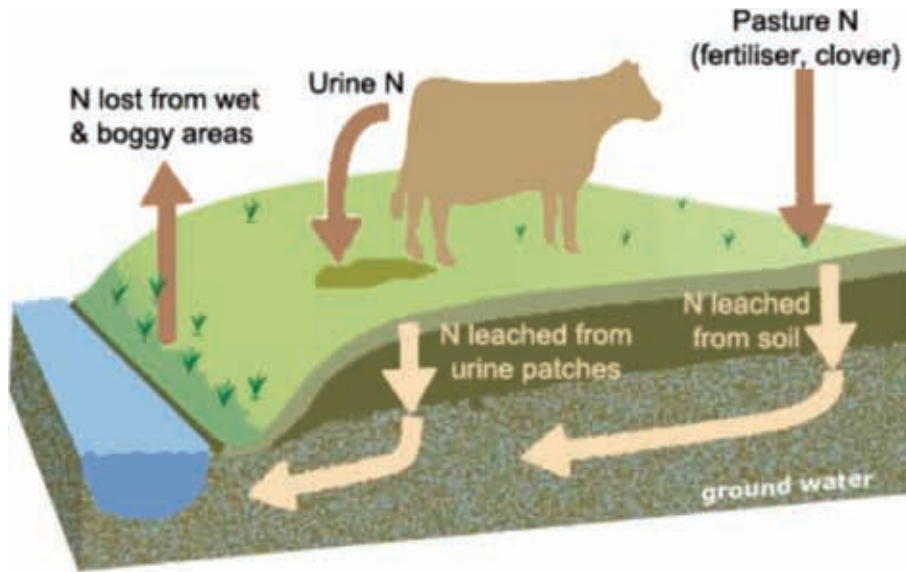


Genetically Fixing the Waterways?

In all the hullabaloo from the recent election, one of the strangest in memory, there was a lot of discussion about our waterways and, in particular, the role the dairy industry plays in pollution. It

placed on the farming community to prove they are 'clean'.

Recently scientists at CRV Am-breed have come up with a novel solution, to solve the problem with genetics.



seems that there is a strong push to stop cows soiling our pristine rivers so that people can do it instead.

When the farming industry pointed out the kilometres of fencing and the number of riparian strips going in the argument then swung to cows' urine and the leaching of nitrogen from that into the land and water. Once again the onus is

First of all the theory: A cow eats approximately 4500 – 5000 kg dry matter per year. Dry matter is 20 - 23% protein therefore a cow will eat approximately 1000 kg protein each year.

Protein is 16 % nitrogen so that the average cow has an intake of around 160 kg nitrogen per year.

A cow loses protein in 5 ways, milk production, muscle growth, faeces,

"It would certainly be a much cleaner and greener issue than the legalization of cannabis smoking."

urine and as gases such as ammonia or nitrous oxide.

Genetically bulls can produce cows with less milk urea. This is due to higher milk protein produced. There appears to be a correlation between low milk urea nitrogen and high protein in milk.

The theory is that cows with a lower milk urea content are converting more nitrogen into milk protein, but this has to be fully tested and proven.

The corollary being that this would be linked to lower urine shedding of nitrogen but this is also still theory that requires proof.

There may be a reduction of 10% of urine shed nitrogen possible and that can be increased to possibly 30% over time by genetic means.

While the theory still requires scientific proof it is promising and shows that the farming community does take the issue seriously.

It would certainly be a much cleaner and greener issue than the legalization of cannabis smoking.

Scary Ride

A monastery was perched high upon an isolated cliff, and the only way to reach it was to ride in a basket that was hauled to the top by a team of monks.

The ride up was not for the faint hearted and one visitor was looking exceedingly pale by the time he reached the summit.

As he stepped trembling from the basket he couldn't help noticing that the rope was old and frayed.

"How often do you change the rope?" he asked one of the monks.

The monk thought for a moment and then replied, "Whenever it breaks."



Heme

When long standing time tested products leave a market the hole that is left can often appear as great as Steven Joyce's supposed fiscal hole. However replacement is often not as difficult as it seems as newer technology often produces something even better.

It is a little like a great All Black retiring, the production line is so strong that soon the great player is confined to history and others take his mantle.

A case in point was the demise of Kynoselen a few short years ago. There was much wailing and gnashing of teeth in the equine industry (and inside EA as well!). It definitely was a product years ahead if its time but time was finally up. The replacement product, Metabolase, had so many extra features and benefits that Kynoselen soon resembled our great former All Black.



Similarly, in the equine world, we have the demise of long standing haematinics, Blut and its generic Megablud. Both originated in Canada by a company that was taken over by Vetoquinol some years ago. Blut stayed with its original NZ registrant and Megablud, also produced by Vetoquinol Canada, was marketed by EA. Supply for these products has discontinued.

While this did leave an apparent hole in the market, a convenient nutritional haematonic in practical, easy to use package form, the gap has not only been filled rapidly but the new product, much like Metabolase against Kynoselen, is a step ahead.

The new product is called Heme and has the advantage of more up to date nutritional data leading to improved formulation.

In addition the minerals used are sourced from Bioplex.

Bioplex minerals are bound organically to amino acids and a range of peptides, these are co-factors in enzymes critical in the animals de-

fence system, growth and reproduction.

Bioplex minerals are more readily absorbed because they take advantage of both amino acid and peptide absorption routes and they are also more easily transported to the target tissues because they do

BIOPLEX®

not compete with inorganic mineral transport systems.

Heme also contains natural antioxidants.

The sachet size of 60gm is ideal and minimises the risk of getting the dose wrong. Heme can be given on feed or mixed with water and has highly palatable apple flavouring.

Each sachet contains added mineral oil for more minerals, but also to prevent dust induced snorting and dust inhalation.

Each dose of Heme contains Vitamin B1 75mg, Vitamin B2 40mg, Vitamin B3 120mg, Vitamin B5 100mg, Vitamin B6 60mg, Vitamin B12 500mg, Vitamin K 20mg, Vitamin B9 24mg, Biotin 1mg, Copper (Organic) 50mg, Zinc (Organic) 100mg, Manganese (Organic) 100mg, and Iron (Organic) 100mg.

Playing Through

Two blokes are playing golf and are being held up by a pair of women playing very slowly ahead.

As the day drags on they get increasingly frustrated and one of them says, "I'm going to go up there and ask them either to hurry up or let us play through."

The bloke goes up but comes back a few minutes later looking very sheepish.

You will never believe this, when I got up closer, I realized that one is my wife, the other is my lover. So I took off before they saw me and came back."

The other bloke say. "Oh well, I'll go up there and hurry them up."

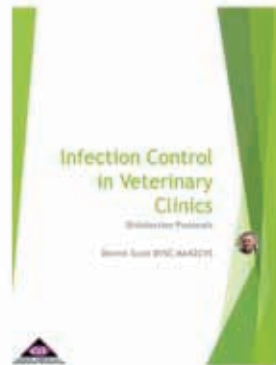
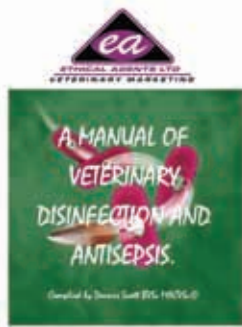
He heads off and a few minutes later he also comes back looking very sheepish too.

"Gee," he says, "it's a small world isn't it?"

ETHICAL AGENTS BRINGS KNOWLEDGE

AND R&D TO

THE INDUSTRY



**The Mechanics of
Antimicrobial
Resistance**



Ever Had The Pleasure of Flying Ryanair?

Spare a thought for poor ole Michael O'Leary, Chief Executive of Ryanair.

After arriving in a hotel in Manchester, he went to the bar and asked for a pint of Guinness. The barman nodded and said, "That will be £1 please, Mr. O'Leary."

Somewhat taken aback, O'Leary replied, "That's very cheap," and handed over his money.

"Well, we do try to stay ahead of the competition", said the barman. "And we are serving free pints every Wednesday from 6 pm until 8 pm. We have the cheapest beer in England".

"That is remarkable value", Michael comments.

"I see you don't seem to have a glass, so you'll probably need one of ours. That will be £3 please."

O'Leary scowled, but paid up. He took his drink and walked to-

wards a seat. "Ah, you want to sit down?" said the barman. "That'll be an extra £2. You could have pre-booked the seat, and it would have only cost you £1."

"I think you may be too big for the seat sir, can I ask you to sit in this frame please".

Michael attempts to sit down but the frame is too small and when he can't squeeze in, he complains "Nobody would fit in that little frame".

"I'm afraid if you can't fit in the frame you'll have to pay an extra surcharge of £4 for your seat sir".

O'Leary swore to himself, but paid up. "I see that you have brought your laptop with you" added the barman. "And since that wasn't pre-booked either, that will be another £3."

O'Leary was so incensed that he walked back to the bar, slammed his drink on the counter, and

yelled, "This is ridiculous, I want to speak to the manager".

"I see you want to use the counter," says the barman, "that will be £2 please."

O'Leary's face was red with rage. "Do you know who I am?"

"Of course I do Mr. O'Leary."

"I've had enough! What sort of a Hotel is this? I come in for a quiet drink and you treat me like this. I insist on speaking to a manager!"

"Here is his e-mail address, or if you wish, you can contact him between 9.00 am and 9.01am every morning, Monday to Tuesday at this free phone number. Calls are free, until they are answered, then there is a talking charge of only £1 per second, or part thereof".

"I will never use this bar again".

"OK sir, but do remember, we are the only hotel in England selling pints for £1."